

Private & Confidential

Geoscience Regulation Office,
Department of the Environment, Climate and Communications,
29-31 Adelaide Road,
Dublin,
D02 X285,
Ireland.

Re: Public consultation on the application for decommissioning of certain facilities within the Kinsale Area gas fields

15 November, 2021

Dear Sir/Madam,

Please see below a submission from dCarbonX Limited ('dCarbonX') responding to the Department of Environment, Climate & Communications ('DECC') on the above referenced public consultation.

Submission on the application

dCarbonX considers the Kinsale Area gas field pipelines to be potential national strategic assets essential to Ireland's security of energy supply, net zero commitments & future offshore wind resource development:

- Ireland currently imports ~60% of its natural gas and 100% of its oil consumption. The only Irish indigenous gas production is from the Corrib gas field which is expected to cease production by the end of the decade;
- Ireland has had no large-scale natural gas storage capacity since the closure of the SW Kinsale gas storage facility in 2017. Imported natural gas enters Ireland via a single entry point at Moffat, Scotland, which post-Brexit now lies outside the EU in a 'third country' jurisdiction. Natural gas power production is currently the cleanest baseload support for balancing Ireland's increasing intermittent renewable energy generation capacity;
- In order for Ireland to decarbonise its non-power generation sectors such as heavy transportation, industry, shipping & heating, it is clear that molecules such as green hydrogen & hydrogen carriers will be required in the national energy mix. These molecules can be generated using renewable sources such as wind and solar during times of peak generation when the grid is over-supplied. Large-scale storage of these molecules will be required to balance the energy load and manage Ireland's renewable energy resources;
- Ireland possesses the highest average sustained wind speeds in the European Union. The Sustainable Energy Authority of Ireland (SEAI) estimates that €100-200 billion of investment in Irish offshore wind will occur by 2050 supporting the development of over 40 GW of generation capacity. Wind Energy Ireland, the industry advocacy group, recently reported that c. 22 GW of capacity is already in development. Such significant, albeit intermittent, energy generation

capacity would exceed Irish domestic market consumption and drive the requirement for large-scale energy storage capacity development.

Overview on dCarbonX

dCarbonX is a GeoEnergy company focused on developing offshore subsurface energy storage and carbon sequestration assets to facilitate the Energy Transition. To achieve this, dCarbonX uses its proprietary subsurface knowledge and operational experience to originate and build a portfolio of Energy Transition assets with a specific focus on subsurface hydrogen / hydrogen carrier storage and carbon sequestration assets.

As a demonstration of this, dCarbonX has established a strategic partnership with ESB for the joint assessment and development of offshore green hydrogen / hydrogen carrier subsurface storage and the company is also collaborating with US multi-national Pentair, to advance Carbon Capture & Sequestration projects in Ireland and the United Kingdom to help mitigate carbon emissions. dCarbonX is strategically and technically supported by several leading international companies including Stena Drilling, AGR, Fugro, Geostock & CGG.

Context of the Submission

As Ireland moves forward with its ambitious plans to achieve its climate and de-carbonisation objectives by 2050, unprecedented changes will be required within the energy industry in Ireland over what is a relatively short period of time (30 years).

As the DECC is only too aware, Ireland has acute short-term and longer-term issues to ensure that it can deliver on its core objectives of:

- Energy Security & System Resilience
- Net Zero
- Affordable Energy
- Energy Independence
- Wind Energy Resource Development

To achieve these objectives, a host of solutions are required including but not limited to increased renewables penetration, energy system upgrades, more interconnectivity, consumer behaviour changes and integrated energy management, whilst ensuring that Ireland also has in place vital energy security of supply.

dCarbonX sees large-scale energy storage as a key requirement as Ireland moves forward. With indigenous gas production falling, and with the Kinsale gas storage facility now de-commissioned, Ireland has no large-scale indigenous gas storage capacity. Whilst it is acknowledged that batteries may help to provide some measure of storage capacity for the electricity grid, Ireland currently has no large-scale energy storage capacity.

Future Energy Transition Plans using Hydrogen / Hydrogen Carriers as the storage medium

As part of the Energy Transition, dCarbonX sees a significant future role for green hydrogen / hydrogen carriers produced from Ireland's exceptional wind energy resources. dCarbonX's joint venture with the ESB for green hydrogen storage provides a staged pathway to achieve this, including the recently announced Green Hydrogen @ Kinsale project. dCarbonX completed a new proprietary study of the energy storage potential using hydrogen / hydrogen carriers in the reservoirs of the Kinsale Area gas fields. This study indicated that the area has the potential to host c. 3 TWh of energy storage capacity with significant further upside potential.

It is clear that hydrogen / hydrogen carriers and their safe storage will play a pivotal role in delivering Ireland's decarbonisation plans whilst providing indigenous energy security of supply. Long-term, hydrogen / hydrogen carriers will provide affordable resilient energy and represents a transformational export opportunity in the decades ahead.

Summary

dCarbonX believes a full assessment of the potential reuse of the Kinsale Area gas field pipeline infrastructure for future energy storage capacity development, considering our present and future national energy context, should be carried out before choices become further limited by ongoing abandonment activities.

- The storage of hydrogen / hydrogen carriers was not considered as a potential reuse option by the Operator during its assessment.
- The availability of suitable pipelines and plant could vastly reduce both cycle times and costs for any future energy storage project in the area which would be positive in terms of Ireland's security of supply.

We trust this submission to the consultation process will be given due consideration by DECC and we are as always available to provide any further clarity to you as required.

Yours sincerely,

